Visualizing Datasets with Excel: Heatmaps, Radar Charts, and More

Marci Brandenburg | mbradenb@umich.edu
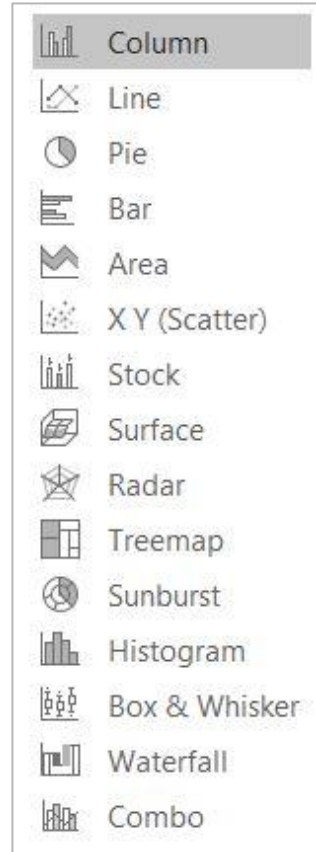Tyler Nix | tnix@umich.edu

Contact: libvisualization@umich.edu

Housekeeping

- Today's charts require Excel 2016 or later
- We will send data file and instructions following the session
- Please ask questions via the chat box
- Please mute your microphone
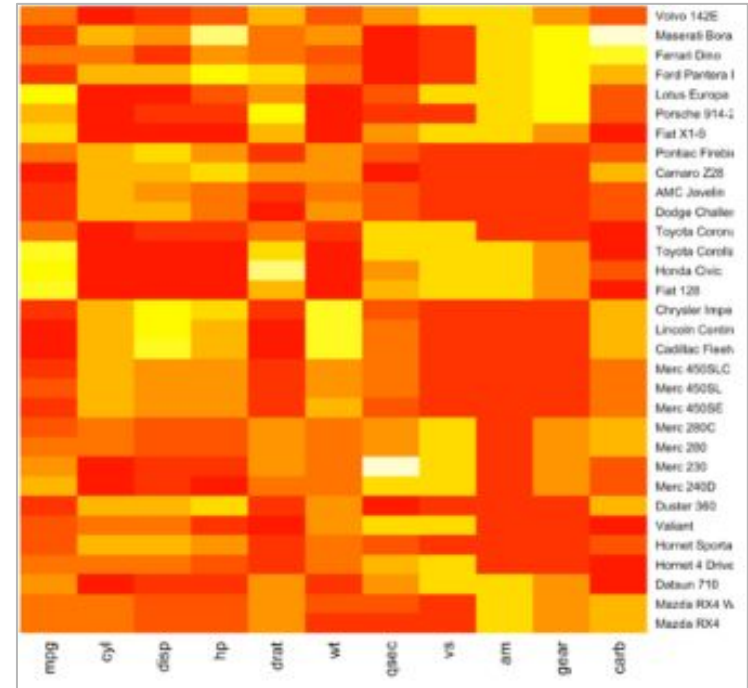
Learning outcomes

After today, you should be able to:

- Create the following visualizations in Excel
  - Heatmap
  - Box & whisker plot
  - Treemap
  - Radar chart
- Customize the visualizations
- Export your visualizations

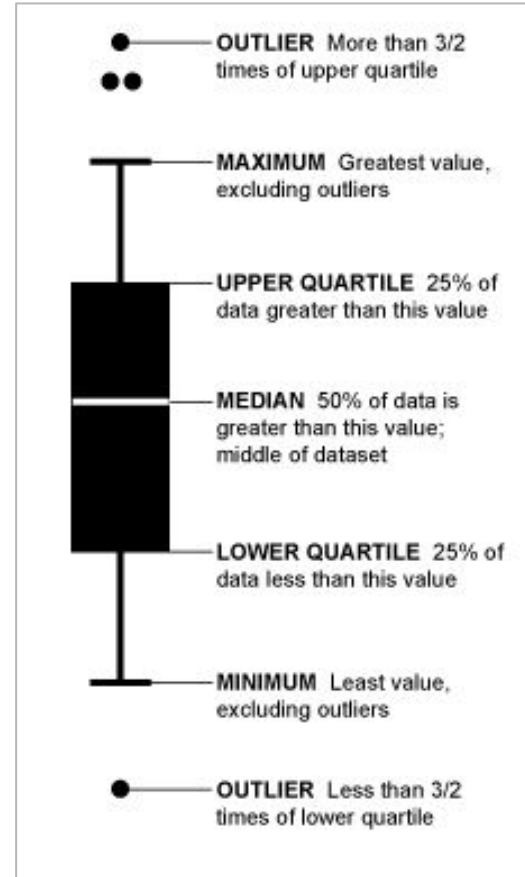|	
▥	Column
⟋	Line
◔	Pie
▤	Bar
◺	Area
⋰	X Y (Scatter)
▥	Stock
▱	Surface
✶	Radar
▦	Treemap
◕	Sunburst
▥	Histogram
▥	Box & Whisker
▥	Waterfall
▥	Combo

Heatmap

- Individual values represented by color
- Uses color scale to show patterns in data
- Best options for color blind:
  - blue/orange
  - blue/red
  - blue/brown

https://www.r-graph-gallery.com/heatmap

Box & Whisker Plot
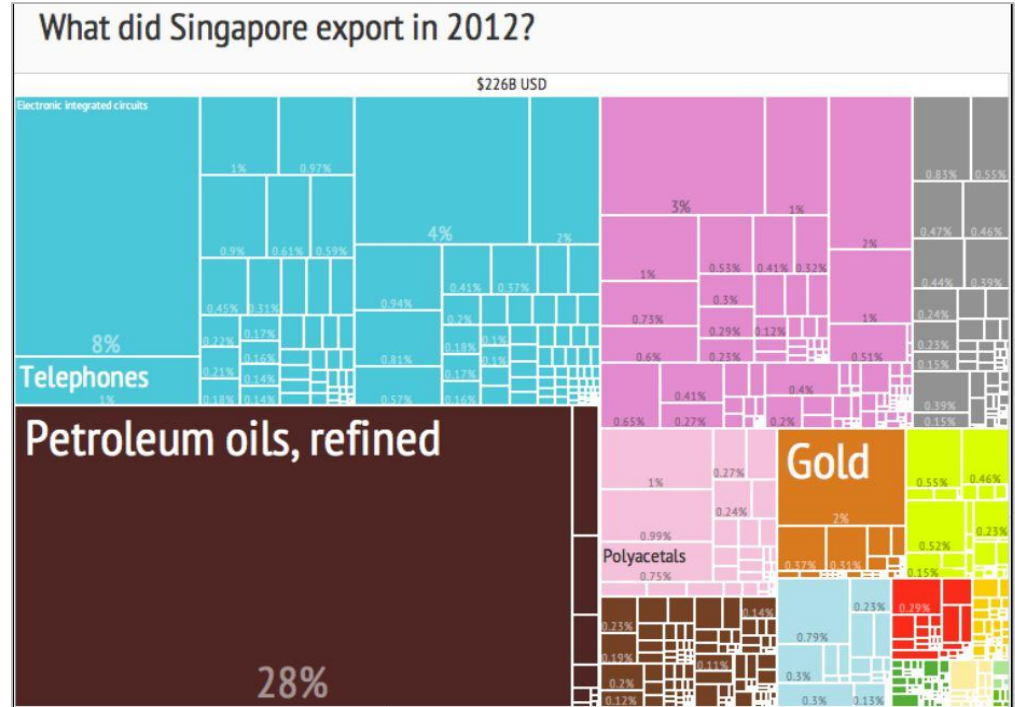
- Visually represent distribution of data
- Shows median, mean, upper and lower quartiles, outliers
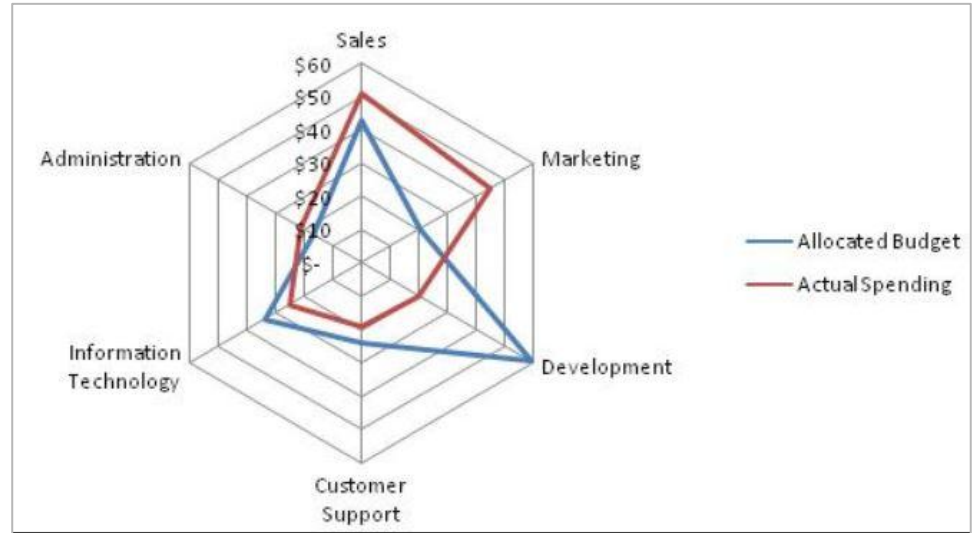- First available in Excel 2016

OUTLIER More than 3/2 times of upper quartile

MAXIMUM Greatest value, excluding outliers

UPPER QUARTILE 25% of data greater than this value

MEDIAN 50% of data is greater than this value; middle of dataset

LOWER QUARTILE 25% of data less than this value

MINIMUM Least value, excluding outliers

OUTLIER Less than 3/2 times of lower quartile

https://flowingdata.com/2008/02/15/how-to-read-and-use-a-box-and-whisker-plot/

Treemap

- Can be used to visualize parts of a whole or hierarchical structures
- New option for Excel 2016

https://en.wikipedia.org/wiki/Treemapping

Radar Chart

- See similarities and outliers with multivariate data
- Shows values relative to a center point

https://en.wikipedia.org/wiki/Radar_chart